

1.0 PURPOSE OF AND NEED FOR ACTION.

1.1. INTRODUCTION.

The Jacksonville District proposes maintenance dredging of the Tampa Harbor Navigation Project (i.e., Main Shipping Channel and Upper Channels, Hillsborough River, Big Bend, Port Sutton and Alafia River). **Figure 1** outlines the location and the limits of the Tampa Harbor Project. Material disposal options under consideration include an approved Ocean Dredged Material Disposal Site (ODMDS), Dredged Material Management Areas (CMDA), and a Dredged Material Placement Area (BPA). **Figures 2, 3, and 4** show the location of the disposal sites under consideration. Sand and sediments have accumulated within Tampa Harbor and the adjoining channels reducing the navigable capacity. In order to meet the commercial and public navigation needs as authorized by Congress, maintenance dredging is required to maintain the federally authorized standards.

1.2. AUTHORITY.

Rivers and Harbors Act of December 31, 1970, House Document 401, 91st Congress, 2nd Session.

1.2.1 SPONSOR:

Tampa Port Authority
Post Office Box 2192
Tampa, Florida 33601

1.3. DECISION TO BE MADE.

The decision to be made includes determining the extent dredging is necessary to maintain the authorized project. This is, in addition to, providing a material disposal site that is economically and environmentally feasible and capable of receiving the dredged volumes.

1.4. RELEVANT ISSUES:

The relevant issues include:

- a. Water quality
- b. Manatees.
- c. Sea grasses.
- d. Sea turtles.
- e. Mangrove wetlands.
- f. Historic Properties.
- g. Aesthetics.
- h. Recreation.
- i. Navigation.
- j. Economics.
- k. Noise.
- l. Safety
- m. Migratory Birds

1.5. PERMIT REQUIREMENTS.

In accordance with the conditions of the Memorandum of Agreement between the Jacksonville District and the State of Florida, the Corps would be required to obtain certification of compliance with State water quality standards unless exempted. This certification would be required for turbidity associated with dredging and the return waters from the dredged material disposal site. However should the preferred dredged material disposal site be offshore, approval would be required also from the Environmental Protection Agency.

The disposal options/alternatives under consideration include the following:

- a. EPA approved (1995) Ocean Dredged Material Disposal Site, 7.6 miles southwest of the entrance marker for the Tampa Harbor Federal Channel.
- b. Shoreline placement along the westerly side of Egmont Key to protect a historic gun battery site.
- c. Upland placement at Construction and Maintenance Disposal Areas 2-D and 3-D located in Hillsborough Bay and Disposal Areas C and A near Cargil Terminal on the Alafia River.

1.6 METHODOLOGY.

An interdisciplinary team used a systematic approach to analyze the affected area, to evaluate the environmental effects, and to write the environmental assessment. This included literature research, field investigations, and coordination with resources agencies and private groups having expertise in particular areas.

2 ALTERNATIVES INCLUDING THE PROPOSED ACTION.

2.1 INTRODUCTION.

The alternatives section is the heart of this Environmental Assessment. This section describes in detail the no-action alternative, the proposed action, and other reasonable alternatives that were studied in detail. Then based on the information and analysis presented in the sections on the Affected Environment and the Probable Impacts, this section presents the beneficial and adverse environmental effects of all alternatives in comparative form, providing a clear basis for choice among the options for the decisionmaker and the public. The key to this section is the alternative comparison chart, **Figure 2.1**, page 9. This section has five parts:

- a. A description of the process used to formulate alternatives.
- b. A description of alternatives that were considered but were eliminated from detailed consideration.
- c. A description of each alternative.
- d. A comparison of the alternatives.
- e. The identification of the preferred alternative.

2.2 HISTORY OF ALTERNATIVE FORMULATION.

From the 1880's to the present, dredging has maintained the various navigation channels in Tampa Bay. Past use of the dredged material was fill material for wetlands. These low-lying areas were converted to fastlands or uplands to promote residential and commercial development, and to aid the construction of highways through these areas. When not used as developmental fill, the dredged material was usually sidecast adjacent to the navigation channel, creating islands in some instances. Some of the islands are still visible today as part of the landscape next to the channels. As the need for this material or its desirability declined, suitable disposal sites were required to hold the dredged material and prevent reentry into the channel. To meet this need, the Environmental Protection Agency (EPA) designed a disposal site in the Gulf of Mexico, offshore from Tampa Bay. This placement area, referred to as an ocean dredged material disposal site (ODMDS), started receiving material in 1981. Today, the site is not longer in use, having reached disposal capacity.

During the preparation of the Final Environmental Impact Statement for designation of a new ODMDS (EPA, 1995), an economic evaluation appendix was prepared to determine the feasibility of disposal alternatives for individual reaches of the Tampa project. This feasibility report determined that it would be economically viable to dispose of dredged material from this area of Tampa Bay only in the ODMDS. Since the ODMDS was not available for use at that time, a search was conducted to find suitable and adjacent uplands within the project's vicinity. Disposal opportunities considered suitable for further evaluation were: 1) a Department of Environmental Protection (DEP) area project, and 2) material placement along the western shoreline of Egmont Key.

Public input received regarding placement of material from the maintenance of St. Petersburg Harbor supported placement along the shoreline of Egmont Key. During that time, the Egmont Key Alliance heavily lobbied the Corps regarding protective and beneficial use of the proposed dredge material. The group sought use of the material to protect the lone and historic gun battery found along the western shoreline. Several historic gun batteries had deteriorated and fallen into the Gulf when unearthed by erosive forces. It was widely assessed that the one remaining battery would meet the same fate, if intervention was not imminent. The proposed use of the dredged material received wide acceptance from the State DEP, in addition to, funds to construct two geo-tube groins to help retard erosion along the shoreline. To date, the structure and material continue to protect the lone and historic gun battery.

The Egmont Key Alliance also requested that future material from maintenance of Tampa Harbor be used to provide continuous protection for the existing battery. This Environmental Assessment would also evaluate the Alliance's disposal recommendation.

2.3 ELIMINATED ALTERNATIVES.

- a. Gulf Disposal. While Gulf Disposal now appears too costly for economic justification, future economic analysis may provide new benefits that would make it feasible. The current site designated by the Environmental Protection Agency (EPA) is approximately 18 to 22 miles southwest of Egmont Key. Disposal would be subject to Corps of Engineers permits and EPA concurrence.
- b. Airport Upland and Near Shore. This is a questionable alternative since environmental mitigation costs may be required and difficult to justify. This alternative considers pumping the excavated material to diked areas on the Albert Whitted Municipal Airport property and a water site adjacent to the airport.
- c. Airport Upland and Near Shore with Gulf Disposal. The combination of the aforementioned two alternatives would have the same concerns as the two separate disposal alternatives. Silty material would go to the Gulf disposal site and sand would be placed mostly in the bay and adjacent upland area of the airport.
- d. Tampa Bay Deep Water Disposal. Material disposal within in a deep water area off Tampa Bay along the 20-foot southern entrance channel to St. Petersburg Harbor.

2.4 DESCRIPTION OF ALTERNATIVES.

2.4.1 No Action.

The "no action" alternative would prohibit the needed maintenance from lack of a suitable disposal option. This alternative would severely restrict the Corps mandate to provide free and unobstructed navigation of the Federally authorized projects in this area.

2.4.2 Dredging and Ocean Disposal.

This disposal alternative is needed for material retrieved during routine maintenance dredging of Tampa Harbor. The project areas would include the entrance channel and turning basin. The material placement would be in accordance with the Site Material and Management Plan for the Tampa Ocean Dredged Material Disposal Site (ODMDS) (EPA, 1995). The standard manatee precautions would also be implemented during dredging (Appendix II). This includes observers and equipment shutdown should manatees come within 50 feet of the operation. If a hopper dredge is used, special precautions would be implemented to protect sea turtles. This includes dredging within a December through March window, observers to monitor dredge outputs for incidental take of turtles, and the use of the sea turtle deflector draghead. The EPA designated site is shown in **Figure 2** below.

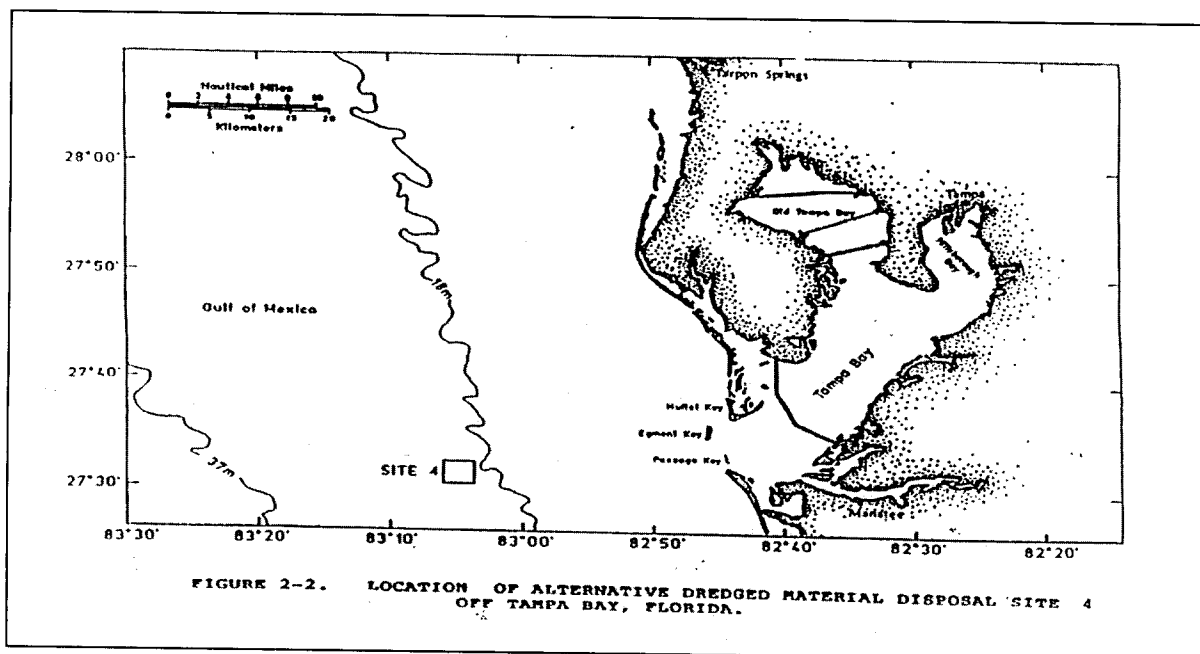


Figure 2. Ocean Material Dredged Disposal Site (ODMS)

2.4.3 Dredging and Egmont Key Beach Placement.

The work would include routine maintenance dredging of Tampa Harbor entrance channel and turning basin. Approximately 300,000 cubic yards of material would be placed along the western shoreline of the island (**Figure 3**).

2.4.4 Construction and Maintenance Disposal Area (CMDA).

2.4.4.1 Disposal Island CMDA 2-D.

CMDA 2-D is a 650-acre manmade island created from the disposal of past dredging activities. Located about 2.5 miles north of Hillsborough Bay, CMDA 2-D primary designation is for material disposal associated with maintenance dredging of Cut C of the Tampa Harbor Project, specifically the Hillsborough Bay and the Alafia River. CMDA 2-D is divided into two parcels, identified as Section A and B. Section A contains 349 acres and Section B 181 acres. The disposal capacity anticipated for this site is 16 to 18 million cubic yards.

2.4.4.2 Disposal Island CMDA 3-D.

CMDA 3-D is a 500-acre nearshore manmade island created also from past disposal activities. The site has two disposal cells, identified as Section A and B. The site is designated for the disposal of material associated with the maintenance of Cut C of the federal project near Hillsborough Bay and the Alafia River.

2.4.5 Cargil/Alafia River Disposal Sites A and C.

2.4.5.1 Cargil/Alafia River Site "A"

Site A is an upland disposal area located about 1 mile south of the Alafia River. This site presently contains 36 acres and is capable of receiving about 500,000 cubic yards of dredged material. This site is specifically designated for the Alafia River and Big Bend portions of the Tampa Harbor Project in Hillsborough Bay. Currently the area is full to capacity and is not available.

2.4.5.2 Cargil/Alafia River Site "C"

This site is located on the north side of the Alafia River and contains about 10 acres. Site C is capable of receiving 600,000 cubic yards of dredge material.

2.6 PREFERRED ALTERNATIVE.

The preferred alternative is to dredge the harbor and beneficially place the material in the Egmont Key Beach Placement Area if it is economically and engineeringly feasible and environmentally sound as this provides benefits to protect the shoreline of Egmont Key and extends the life of the upland disposal areas. Otherwise the traditional placement areas are suitable.

3 AFFECTED ENVIRONMENT.

3.1 INTRODUCTION.

The Affected Environment section succinctly describes the existing environmental resources of the areas that would be affected if any of the alternatives were implemented. This section describes only those environmental resources that are relevant to the decision to be made. It does not describe the entire existing environment, but only those environmental resources that would affect or that would be affected by the alternatives if they were implemented. This section, in conjunction with the description of the "no-action" alternative forms the base line conditions for determining the environmental impacts of the proposed action and reasonable alternatives. The environmental issues that are relevant to the decision to be made are the following:

- a. Water quality.
- b. Manatees.
- c. Sea grasses.
- d. Sea turtles.
- e. Mangrove wetlands.
- f. Historic Properties.
- g. Aesthetics.
- h. Recreation.
- i. Navigation.
- j. Economics.
- k. Noise.
- l. Safety.
- m. Migratory Birds

3.2 GENERAL DESCRIPTION.

Tampa Bay is the largest estuary on the west coast of Florida (USFWS, 1984). As man developed the bay, the natural resources have also been impacted. The Bay has been excavated for navigation purposes; islands and fastland have been created from the dredged material; ports and residential development have encroached on the aquatic environment; and numerous effluents have been discharged into the bay.

3.2.1 Aquatic Resources.

The Bay supports a wide variety of aquatic life including the American oyster which is harvested from the lower Tampa Bay, three species of clams, blue crab, and numerous species of fish: the red drum, spotted seatrout, snook, sheephead, southern flounder, Florida pompano, striped mullet, Gulf menhaden, and the black drum (USFWS, 1984). Many offshore fish spend their juvenile stages in the Bay estuary. These include the red and gag groupers, jewfish, scamp, and the red and mangrove snappers.

3.2.2 Water Quality.

Tampa Bay receives storm runoff from agricultural and residential areas of Pinellas, Hillsboro and Manatee Counties as well as discharges from sewage treatment plants and other facilities. As a result bay waters are high in nitrogen and phosphorous and turbidity has reduced light penetration to 8 feet or less in many areas. The water quality tends to improve as the entrance to the bay is approached. West of the Skyway bridge water quality improves markedly as the bay meets the Gulf of Mexico.

3.3 RELEVANT FACTORS.

3.3.1 Physical.

a. Water quality. Water quality in the project area ranges from poor at the east end to fairly good at the west end. Nitrogen and phosphorous levels are high within the bay but levels of both nutrients fall sharply west of Egmont Key. Turbidity is high through out the project area due to the volume of ship traffic using the Tampa Harbor main channel (2,800 ships and barges a year) and the reduced clearance between the ships and bottom sediments due to shoaling.

b. Historic Properties. Prehistoric and historic sites have been identified in the Tampa Bay vicinity. Several prehistoric sites are located within a mile of Harbor Isles Lake, including the National Register Weeden Island Site. Tampa Bay has a maritime tradition dating back to a Spanish expedition in 1528 (Espey Huston, 1988). A number of wrecks have been documented for the Tampa Bay vicinity during the historic period. Historic property surveys have not been conducted for the St. Petersburg upland disposal site.

c. Noise. Disposal sites CMDA 2-D and 3-D and Cargill Sites A and C are located in Hillsborough Bay in close proximity to an industrial area and airport. These features add to the background noise of the area, in addition to, the calls received from shore and wading birds, in addition to, migratory birds that nest on the disposal sites. Egmont Key located in Tampa Harbor closer to the Gulf and does not receive the same intensity of sounds. It is a recreational site remote from noise sources.

d. Safety. The channel was designed for a specific depth and width. Over the course of time shoaling occurs reducing the navigable capacity of that channel. As this occurs, vessels using this channel must avoid the shallow-water areas. If these areas aren't adequately maintained, the use of the channel becomes a safety hazard for which the Coast Guard can shut its use. In addition, the Egmont Key State Recreation Area is also a former Department of Defense Site, Fort Dade. This site has former gun batteries along the western shore of the island. As part of the liquidation of former DOD sites, an evaluation of the property for the potential of hazardous toxic and radioactive wastes and munitions was conducted. It was determined that no potential exists (Appendix VI).

3.3.2 Biological.

a. Manatees. The West Indian manatee, Trichechus manatus, is known to inhabit the Bay. They are especially known to congregate around the areas of seagrasses and warm water outfalls associated with manufacturing and power generation.

b. Seagrasses. Seagrass beds are important as they offer habitat to several fish species (red drum, spotted sea trout, spot, silver perch, sheepshead, and snook), invertebrates, algae, dolphin, and the manatee. Historically, Tampa Bay has lost much of its seagrass as a result of dredge and fill activities, and degraded water quality associated with urbanization and industry discharge. Since 1950, losses equal approximately 15 thousand acres. A recent increase has been documented, and is attributed to improved bay water quality (TNEP 1996). No seagrasses are located in the shallow-water areas along the west side of Egmont Key.

c. Sea turtles. The following sea turtles are likely to be found near or in the Bay (USFWS, 1987):

green sea turtle.....	<i>Chelonia mydas</i>
hawksbill sea turtle	<i>Eretmochelys imbricata</i>
Kemp's Ridley sea turtle	<i>Lepidochelys kempii</i>
leatherback sea turtle	<i>Dermochelys doriacea</i>
loggerhead sea turtle	<i>Caretta caretta</i>

The beaches on Egmont Key are used for nesting. The western shoreline has not had much nesting success due to the wind and wave action eroding the shoreline. The following chart includes sea turtle nesting monitoring for the western shore of Egmont Key before and after dredged material placement (placement occurred in 2001):

Florida Fish and Wildlife Conservation Commission
Florida Marine Research Institute
Statewide Nesting Beach Survey Program
Sea Turtle Nesting Data for Egmont Key (2000 - 2003)

Year	Length (km)	Start Date	End Date	Loggerhead				Green Turtle				Leatherback			
				# of Nests	# of False Crawls	First Nest Date	Last Nest Date	# of Nests	# of False Crawls	First Nest Date	Last Nest Date	# of Nests	# of False Crawls	First Nest Date	Last Nest Date
2000	5.1	5/11/00	8/31/00	30	102	5/11/00	8/8/00	0	0			0	0		
2001	5.1	5/18/01	9/24/01	15	106	5/19/01	7/28/01	0	0			0	0		
2002	5.1	5/10/02	9/15/02	29	43	5/10/02	8/3/02	0	0			0	0		
2003	5.1	5/14/03	9/30/03	45	59	5/14/03	8/6/03	0	0			0	0		

- d. Mangrove wetlands. Some fringe mangroves can be found on the east side of 2-D. With the identified exception, vegetation at the dredge material management areas is primarily upland species. There are no wetland areas that would be impacted at either 2-D, 3-D, or Cargill Sites A or C.
- e. Migratory Birds. A total of 83 species of birds are associated with marine habitats in Tampa Bay (Dunstan and Lewis 1974). Of significance to this project, adjacent spoil islands 2D, 3D, and the Alafia Banks provide nesting habitat for 22 species of birds, including 10 state-designated "species of special concern", and 2 federally endangered species (see table 2). According to the National Audubon Society and the Florida Game and Fresh Water Fish Commission (GFC), these dredged material created islands serve as important breeding areas. The Alafia Banks are one of the nation's outstanding and most diverse bird colonies, as well as being ranked as Florida's number one colony. It appears the spoil islands provide desirable nesting habitat for many species due to substrate and vegetative conditions, and absence of humans. With appropriate management, these areas will continue to serve as breeding grounds for a myriad of species.
- f. The following avian species were observed in the project area: brown pelicans (*Pelecanus occidentalis*), laughing gulls (*Larus atricilla*), ring-billed gulls (*Larus delawarensis*), cormorants (*Phalacrocorax auritus*), roseate spoonbills (*Ajaia ajaja*), reddish egrets (*Egretta rufescens*), tricolored egrets (*Egretta tricolor*), snowy egrets (*Egretta thula*), great egrets (*Casmerodius albus*), little blue herons (*Egretta caerulea*), great blue herons (*Ardea herodias*), willets (*Catoptrophorus semipalmatus*), black-necked stilts (*Himantopus mexicanus*), ruddy turnstones (*Ironware interperet*), white ibis (*Eudocimus albus*), glossy ibis (*Plegadis falcinellus*), caspian terns (*Sterna caspia*), sandwich terns (*Sterna sandricensis*), black skimmer (*Rynchops niger*), american oystercatchers (*Haematopus palliatus*), and yellow-crowned night herons (*Nycticorax violaceus*).

Table 2- Breeding Pairs of Alafia Bank and Tampa Port Authority Spoil Islands 2D and 3D for 1996_ (National Audubon Society 10-96).

<u>Species</u>	<u>Alafia Bank</u>	<u>Island 2D</u>	<u>Island 3D</u>
Brown Pelican#*		600	
Double-crested Cormorant		200	
Great Blue Heron		80	
Great Egret		80	
Snowy Egret*		200	
Little Blue Heron*		90	
Tricolored Heron*		230	
Reddish Egret*		45	
Cattle Egret		700	
Black-crowned Night Heron		50+	
Yellow-crowned Night Heron		50+	
White Ibis*		8100	
Glossy Ibis		525	
Roseate Spoonbill*		100	
Clapper Rail		+	+
American Oystercatcher*	18	34	11
Willet	6+	10+	5+
Laughing Gull	500	3400	
Caspian Tern			93
Royal Tern			180
Sandwich Tern			135
Black Skimmer*			320
Total Pairs	11,074	544+	4,144

3.3.2 Social.

- a. Aesthetics. Egmont Key State Recreation Area is a relatively remote island having limited access. This small barrier island overlooks the entrance to Tampa Bay and the Gulf of Mexico.

The general area at CMDA 2-D/3-D and Cargill is that of an industrial area located along the waterfront with recreational boating and fishing occurring in the local communities. The Cargill Fertilizer Plant is located on the north side of the mouth of the Alafia River. The peninsular to the east of the plant has active dredged material management areas Cargill A and C. The aesthetics of the area is within a commercial navigation area.

- b. Recreation. Recreational activities associated with the Port are linked to the cruise ships. Egmont Key is owned by the Department of Interior but is leased to the State of Florida and has been designated Egmont Key State Recreation Area. The facility

has numerous former military batteries which attracts history buffs. The beach serves many weekend beach goers.

Recreational activities associated with dredged management areas CMDA 2-D/3-D and Cargill sites A and C are related to Ornithology or bird watching. Site 2-D provides nesting habit for 22 species of birds, including 10 State designated species of special concerns, and two federally endangered species. Overall, 83 species of birds are associated with the above disposal sites and marine habitat in Tampa Bay. A 1996 study by the National Audubon Society found that 544 nesting species occupy 2-D and about 4,144 occur on 3-D. The Cargill sites also provide nesting opportunities for a wide variety of shore, wading, and migratory birds.

3.3.3 Economics

- a. Navigation. The navigation channel allows transportation of international and domestic cargo to and from Tampa Harbor. This provides long-term economic stimulus to the economy of Tampa metropolitan area and the generation of revenues from the sale of goods and services to the public.
- b. Economics. The activities that originally justified this project in Tampa Harbor were a tonnage moved of 268,206 in 1898. This is the first available information in the District Office records for Tampa Harbor. The first breakdown of cargo available for Tampa Harbor is in 1913. Principle items received were coal, sand, shell, cement, brick, Havana Tobacco and miscellaneous merchandise. Major items shipped were phosphate, lumber and miscellaneous freight. The total tonnage for 1913 was 2,222,873 tons. This represented increase of 825 percent in just 15 years from 1880. This phenomenal increase had been attributed to channel deepening in the harbor. Since the deepening of the entrance no maintenance dredging has been conducted and sedimentation forcing vessels to light load in the upper channel. This required that the vessels either add additional freight at another port or load from a lighter (a barge) further down the harbor. The data used to justify the Federal project in Tampa was taken from 1971. Tampa Harbor was the 8th largest port in the United States, handling 36,000,000 tons of commerce almost equally divided between inbound and outbound. The major commodities requiring deeper channels are phosphates, petroleum products, and sulfur. Phosphate products were the major beneficiaries of deepening the channels. There were three major phosphate terminals at Tampa where vessels could not be fully loaded because of restrictive channel depths. In that year, there were some 230 outbound vessels of which about 160 could have taken on more cargo if not restricted by draft. Looking at economic information for Tampa Harbor over the last five years, tonnage and growth rates appear to have stayed reasonably steady. The numbers have varied but while being down one year they recovered in the next. In 1994 Tampa handled about 49 million tons of cargo and commercial passenger transport increased about 50 percent.

4 ENVIRONMENTAL CONSEQUENCES.

4.1 INTRODUCTION.

This section describes the probable consequences of implementing each alternative on selected environmental resources. These resources are directly linked to the relevant issues listed in Section 1.4 that have driven and focus the environmental analysis. The following includes anticipated changes to the existing environment including direct and indirect impacts, irreversible and irretrievable commitment of resources, unavoidable effects and cumulative impacts.

4.1.1 Cumulative Impacts.

Cumulative impact is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions (40 CFR 1508.7).

4.1.2 Irreversible and Irretrievable Commitment of Resources.

a. Irreversible. An irreversible commitment of resources is one in which the ability to use and/or enjoy the resource is lost forever. One example of an irreversible commitment might be the mining of a mineral resource.

b. Irretrievable. An irretrievable commitment of resources is one in which, due to decisions to manage the resource for another purpose, opportunities to use or enjoy the resource as they presently exist are lost for a period of time. An example of an irretrievable loss might be where a type of vegetation is lost due to road construction.

4.2 NO ACTION ALTERNATIVE.

4.2.1 Physical.

a. Water Quality. There would be sporadic, major increases in water quality due to the mooring of ships caused by the propeller wash disturbing the bottom sediments.

b. Historic Properties. The no action alternative would have no effect on significant historic properties.

d. Noise. There would be no impact from this alternative.

e. Safety. There would be a long-term adverse impact on recreational and commercial navigation from a reduction in the navigable capacity of the channel.

4.2.2 Biological

a. Manatees. There would be no impacts on manatees from the no action alternative.

b. Sea grasses. There would be no impact on seagrasses.

c. Sea turtles. There would be no impact on sea turtles.

- f. Mangrove wetlands. There would be no impact on mangroves.
- g. Migratory Birds. There would be no impacts on migratory birds.

4.2.3 Social

- a. Aesthetics. There would be no impact.
- c. Recreation. There would be a low level of recreational opportunities from the few cruise ships and charter boats using the facility.

4.2.4 Economic

- a. Navigation. There would be reduced navigation to the port due to the shoaling in the channel.
- b. Economics. There would be a negative economic stimulus due to the reduced navigability of the channel and harbor.

4.2.5 Cumulative effects.

The only cumulative effect would be the continued reduced navigable capacity of the channel and harbor if it is not maintained.

4.2.6 Unavoidable effects.

If the harbor is not maintained, there would be reduced navigable capacity of the channel and loss of revenues from the reduced commercial use of the port. There would be increased turbidity levels from ships properly wash in the reduced depths.

4.2.7 Irreversible and Irretrievable Resource Commitments.

There would be no commitments made for the No Action alternative.

4.3 DREDGING AND OCEAN DISPOSAL

4.3.1 Physical.

a. Water Quality. Dredging operations would produce temporary changes in water quality. Turbidity levels in the areas of dredging would be elevated above normal. Visible plumes at the water surface are expected in the immediate vicinity of the dredging operation. Elevated turbidity levels are expected to dissipate rapidly, returning to background levels in a short period of time. The disposal area has been designed and sized to allow for settling of sediments prior to being discharged into the Bay. Temporary minor elevations in turbidity levels will be experienced from the return water from the disposal site.

Recent concern raised by local conservation interests, for which there is some tentative scientific agreement, suggests that bay sediments may be high in various forms of nitrogen. Resuspension of these nutrients in the water column as a result of disturbing sediments is being postulated as a cause of excessive plankton growth that shades out seagrasses. Maintenance dredging will result in a temporary increase in turbidity in the immediate project area. However, no long term adverse impact on water quality will result from this project. Increased depth and clearance in

the shipping channel as a result of shoal removal will reduce turbidity due to a reduction in sediments being resuspended and retained in the water column by prop wash of passing ships.

b. Historic Properties. No adverse impact. Placement of dredged sand on Egmont Key would benefit the long-term protection of a historic gun battery located on the western side of the island.

c. Noise. There would be relatively no impact from dredging within the harbor due to the background levels within the harbor area. There would also be no impact at the ODMDS because of the lack of human habitation at the site.

d. Safety. There would be a long-term benefit on safety by maintaining the approved channel depths for use by commercial and recreational vessels.

4.3.2 Biological.

Dredging would result in the loss of benthic organisms at the sites designated for maintenance. These communities will reestablish themselves upon completion of the work. Temporary disruption of normal activity of marine life in the vicinities of the dredging and disposal areas return water is likely. Commercial fisheries existing at or near the disposal areas should not experience adverse effects. Most animal life will relocate to surrounding areas during disposal operations. As a result of dredging impacts, seagrasses could experience inhibited growth due to increased nutrient levels which causes algae blooms, increased turbidity and reduced photosynthesis. The benthic fauna would be smothered by the placement of dredged material at the ODMDS site. Fish would avoid the turbidity plumes to the extent possible. Some species of fish would be attracted to the suspension of benthic organisms in the water column contained in the material. The disposal mounds would be avoided by the dumping operations, thereby, avoiding impacts to the calcareous algae, sponges, ascidians and tube coral that have colonized the area.

a. Manatees. Since manatees are not likely to be found in the vicinity of Cuts A and B of the Harbor, they are not likely to be affected. To insure the manatee's protection, the standard State and federal manatee protection conditions would be implemented during construction (Appendix II).

b. Seagrasses. There are no seagrasses in the vicinity of the dredging or disposal area. Therefore, there would be no impact on this resource.

c. Sea turtles. Sea turtles are known to inhabit the areas around the mouth of the Bay as they migrate to nesting and forage areas. If a hopper dredge is used for the work, there could be an impact on sea turtles in the area. In order to minimize this impact special conditions would be implemented during dredging to avoid taking sea turtles. These conditions include the use of the new prototype draghead with the turtle excluder device, predredge trawling to determine turtle population numbers and monitoring of the equipment to insure proper design and use.

d. Migratory Birds. There would be no impact.

4.3.3 Social.

a. Aesthetics. Air pollution, water turbidity, and noise pollution increases can be expected during project construction. Temporary construction impacts will not adversely affect the existing aesthetics found in the Tampa Harbor area. Aesthetic resources of Tampa Harbor could be minimally impacted with the deposit of the project's dredged material in the ODMDS.

d. Recreation. No recreational activities would be affected by the dredging or disposal operations. The increased navigable capacity of this harbor would provide for major recreational benefits derived from cruise ships using the port.

4.3.4 Economic

a. Navigation. The proposed work will result in some temporary disruption of normal vessel traffic in the channel. The completion of work will have a favorable impact on the port with resulting beneficial effects to the local and regional economies.

b. Economics. There would be a minor short-term stimulus to the local economy from the sale of goods and services in support of the dredging. There would be a long-term minor but beneficial impact on the regional economy from the increased safe passage of all types of commercial vessels into this port area.

4.3.5 Cumulative effects.

There would be no cumulative effects from the maintenance dredging and disposal operations.

4.3.6 Unavoidable effects.

There would be turbidity generated at both the dredging and disposal sites. The excavation of the material would eliminate benthic organisms within the dredging cut and cover the benthic organisms at the disposal site.

4.3.7 Irreversible and Irretrievable Resource Commitments.

A long-term commitment has been previously been made concerning the designation of the ODMDS, and the use and maintenance of the navigation channel. Basically, these commitments of the bottom resources are irreversible and irretrievable. These commitments also extend to submerged aquatic vegetation and wetlands that occur within the vicinity and surrounding areas of the disposal sites.

4.4 DREDGING AND EGMONT KEY BEACH PLACEMENT.

4.4.1 Physical.

a. Water Quality. Dredging operations would produce temporary changes in water quality. Turbidity levels in the areas of dredging would be elevated above normal. Visible plumes at the water surface are expected in the immediate vicinity of the dredging operation. Elevated turbidity levels are expected to dissipate rapidly, returning to background levels in a short period of time. The disposal area has been designed and sized to allow for settling of sediments prior to being discharged into the Bay.

Temporary minor elevations in turbidity levels will be experienced from the return water from the disposal site.

Recent concern raised by local conservation interests, for which there is some tentative scientific agreement, suggests that bay sediments may be high in various forms of nitrogen. Resuspension of these nutrients in the water column as a result of disturbing sediments is being postulated as a cause of excessive plankton growth that shades out seagrasses. Maintenance dredging will result in a temporary increase in turbidity in the immediate project area. However, no long term adverse impact on water quality will result from this project. Increased depth and clearance in the shipping channel as a result of shoal removal will reduce turbidity due to a reduction in sediments being resuspended and retained in the water column by prop wash of passing ships..

b. Historic Properties. Egmont Key is the location of Egmont Key State Park and the former Fort Dade. Egmont Key is also the location of a former U.S. Marine Hospital, and the site of 19th century occupations associated with the Lighthouse Complex, Seminole War and Civil War. Beach placement of sand would be a benefit to help restore the shoreline in front of the former coastal artillery fortifications.

c. Noise. There would be relatively no impact from dredging within the harbor due to the background levels within the harbor area. There would be increases in noise levels at the disposal site from the presence and operation of the discharge equipment. This impact would be mitigated by the implementation of local noise ordinances.

d. Safety. The navigable capacity of the channel would be maintained providing long-term safety benefits.

4.4.2 Biological

a. Manatees. Since manatees are not likely to be found in the vicinity of the Harbor, they are not likely to be affected. To insure the manatee's protection, the standard State and federal manatee protection conditions would be implemented during construction (Appendix II). In addition, a special dedicated manatee monitor will be used on clamshell operations.

b. Sea grasses. There are no seagrasses in the vicinity of the dredging or disposal area.

c. Sea turtles. Sea turtle nesting could be adversely impacted during placement of dredged material along the Beach Placement Area. To mitigate this impact, a nest monitoring and relocation program would be implemented during construction. After construction the beach would be monitored for compaction and escarpments and if the beach does not meet standards for nesting the beach would be tilled. During dredging, sea turtles could be affected if a hopper dredge is used. To reduce the potential for impacts the hopper dredge would be equipped with draghead deflectors and the inflows and outflows monitored for incidental takes.

- e. Mangrove wetlands. There would be no impact on mangroves.
- f. Migratory Birds. There could be an adverse impact on migratory bird nesting in the beach placement area. This impact would be mitigated by the implementation of the Districts migratory bird protection plan during construction. This plan includes the voluntary avoidance of migratory bird nesting season (1 April through 30 August). If avoidance cannot be accomplished then, a monitor is employed to identify and segregate nesting areas from construction activities. Beach placement also beneficially impacts the colonial bird nesting areas along the southern tip of the island. This is accomplished by putting sand in the sand budget of the island which supplements the nesting area.

4.4.3 Social

- a. Aesthetics. Air pollution, water turbidity, and noise pollution increases can be expected during project construction. Temporary construction impacts will not adversely affect the existing aesthetics found in the harbor area.
- c. Recreation. There would be a low level of recreational opportunities from the few cruise ships and charter boats using the facility. There would be increased recreational opportunities along the newly created beach on Egmont Key.

4.4.4 Economic

- a. Navigation. The proposed work will result in some temporary disruption of normal vessel traffic in the channel. The completion of work will have a favorable impact on the port with resulting beneficial effects to the local and regional economies. There would be a minor short-term disruption to the recreational boat traffic in the Grande Bayou area from the presence and operation of the dredged material transport and disposal operations.
- b. Economics. There would be a minor short-term stimulus to the local economy from the sale of goods and services in support of the dredging. There would be a long-term minor impact on the regional economy from the increased safe passage of all types of commercial vessels into this port area.

4.4.5 Cumulative effects.

There would be no cumulative effects from the maintenance dredging and disposal operations.

4.4.6 Unavoidable effects.

There would be turbidity generated at both the dredging and disposal sites. The excavation of the material would eliminate benthic organisms within the dredging cut and cover the benthic organisms at the disposal site. Another unavoidable impact would be the short-term disruption to recreational navigation and fishing on Grande Bayou from the presence and operation of the dredged material transport and disposal operations.

4.4.7 Irreversible and Irretrievable Resource Commitments

A long-term commitment has been made concerning the designation of the upland disposal area, and the use and maintenance of the navigation channel. Basically, these commitments of the bottom resources are irreversible and irretrievable

4.5 DREDGING CMDA 2-D AND CMDA 3-D

4.5.1 PHYSICAL.

- a. **Water Quality.** Dredging operations would produce temporary changes in water quality. Turbidity levels in the areas of dredging would be elevated above normal. Visible plumes at the water surface are expected in the immediate vicinity of the dredging operation. Elevated turbidity levels are expected to dissipate rapidly, returning to background levels in a short period of time. The disposal area has been designed and sized to allow for settling of sediments prior to being discharged into the Bay. Temporary minor elevations in turbidity levels will be experienced from the return water from the disposal site. Recent concern raised by local conservation interests, for which there is some tentative scientific agreement, suggests that bay sediments may be high in various forms of nitrogen. Resuspension of these nutrients in the water column as a result of disturbing sediments is being postulated as a cause of excessive plankton growth that shades out seagrasses. Maintenance dredging will result in a temporary increase in turbidity in the immediate project area. However, no long term adverse impact on water quality will result from this project. Increased depth and clearance in the shipping channel as a result of shoal removal will reduce turbidity due to a reduction in sediments being resuspended and retained in the water column by prop wash of passing ships.
- b. **Historic Properties.** There would be no impacts to historic resources. The disposal sites are manmade islands created within the last 50 years.
- c. **Noise.** Dredging equipment would generate some increase levels in this area. These impacts would be short-term and would not reach levels harmful to either man or wildlife.
- d. **Safety.** There are no known safety concerns associated with the project other than what's common to these types of activities. Navigable capacity would be returned to the channel, providing long-term safety benefits. Material placement at the existing disposal sites would increase existing berm elevations. There are no safety factors associated with this activity if stabilized adequately. The Corps' safety performance in this matter is unquestionable.

4.5.2 Biological.

- a. **Manatee.** There should be not adverse impacts to the manatee. During dredging, FWS approved manatee protocols would be in place and standard State manatee precautions would be used. The disposal sites are nearshore confined areas and placement of material do not propose any adverse impacts to the species.

- b. Sea grasses. The project proposes no adverse impacts to submerged aquatic vegetation.
- c. Sea Turtles. Three species of Federally-listed threatened sea turtles are known to occur in Tampa Bay. It is possible that a sparse level of nesting may occur. The turtle nesting occurrence has not been documented or evident on either disposal site. CMDA 2-D and CMDA 3-D are nearshore confined and created upland islands. Placement of dredged material proposes no adverse or beneficial effects to sea turtles.
- d. Mangrove Wetlands. There would be no impact on any wetland species.
- e. Migratory Birds. There could be an adverse impact on migratory bird nesting in the DMMA's. This impact would be mitigated by the implementation of the Districts migratory bird protection plan during construction. This plan includes the voluntary avoidance of migratory bird nesting season (1 April through 30 August). If avoidance cannot be accomplished then, a monitor is employed to identify and segregate nesting areas from construction activities.

4.5.3 Social.

- a. Aesthetics. The existing berms would be raised to accommodate dredge volumes. This action would make the berms the highest geological features in the area. Hillsborough Bay is a highly developed commercial/industrial area and little adverse impact would occur to the area's aesthetics.
- b. Recreation. Recreational activities at the disposal areas are limited to bird watching. The project would have a short-term impact on this use. Upon completion of the project, levels of utilization would return to normal.

4.5.4 ECONOMICS.

- a. Navigation. Benefits are evident to navigation with use of disposal site within close proximity to the dredging area. This reduces material transport time and cost associated with disposal.
- b. Economics. Use of the existing dredge management facility eliminates additional cost that would be incurred from site preparation and new construction. The availability of disposal area is important to maintenance dredging and the economy dependent on safe and unobstructed navigation.

4.5.5 Cumulative Effects.

The cumulative effect of disposal at either CMDA 2-D and 3-D would be the eventual elimination of disposal capacity. However, there are no adverse cumulative impacts associated with the activity. The long-term and cumulative effects are beneficial to birds nesting on the islands by providing replenished area for annual nesting.

4.5.6 Unavoidable Effects.

The project proposes no adverse impacts to resources within the area. Some disruption of navigation patterns may occur to large sea-going vessels, during channel maintenance and loading of dredging material for transport to the preferred disposal site. This impact is only short-terms, but provides long-term benefits at the conclusion. Smaller vessels should not experience any navigation disruptions.

4.5.7 Irreversible and Irretrievable Resource Commitments.

The dredging activity proposes no irreversible or irretrievable commitment of resources. Channel maintenance in this area proposes long-term commitment to the designation of the created upland areas for disposal. This commitment would have short-term impact on bird nesting during each disposal event.

4.6 DREDGING CARGIL/ALAFIA RIVER DISPOSAL AREA "A AND C."

4.6.1 Physical.

- a. **Water Quality.** Dredging operations would produce temporary changes in water quality. Turbidity levels in the areas of dredging would be elevated above normal. Visible plumes at the water surface are expected in the immediate vicinity of the dredging operation. Elevated turbidity levels are expected to dissipate rapidly, returning to background levels in a short period of time. The disposal area has been designed and sized to allow for settling of sediments prior to being discharged into the Bay. Temporary minor elevations in turbidity levels will be experienced from the return water from the disposal site. Recent concern raised by local conservation interests, for which there is some tentative scientific agreement, suggests that bay sediments may be high in various forms of nitrogen. Resuspension of these nutrients in the water column as a result of disturbing sediments is being postulated as a cause of excessive plankton growth that shades out seagrasses. Maintenance dredging will result in a temporary increase in turbidity in the immediate project area. However, no long term adverse impact on water quality will result from this project. Increased depth and clearance in the shipping channel as a result of shoal removal will reduce turbidity due to a reduction in sediments being resuspended and retained in the water column by prop wash of passing ships. There would be some short-term increase in turbidity at the existing discharge pipe for Disposal Area A or C. Normal procedures would be followed to ensure water quality is not adversely impacted during discharge operations. The discharge would meet State standards.
- b. **Historic Properties.** The Cargil/Alafia disposal areas are manmade features within the last 50 years. No adverse impacts would result to any historical properties.
- c. **Noise.** Some increase levels would result from the operation of equipments. The project would occur in an area that has considerable low to moderate decibels from airport activities, commercial and industrial activities, and large vessels. Any increased decibels levels would be minimal and of short-duration, and proposes no adverse impacts to area residents or wildlife.

- d. Safety. There should be no adverse impacts to this value. Beneficial components are anticipated. Navigation would be unobstructed to large draft vessels and existing islands would be replenished with each disposal event.

4.6.2 Biological.

- a. Manatees. There would be no adverse impacts on manatees during construction activities. Manatee protocols would be in place and standard construction precautions would be followed.
- b. Sea grasses. There are would be no impacts on seagrasses.
- c. Sea turtles. There would be no impacts on sea turtles.
- d. Mangrove Wetlands. There are no wetland species established on the disposal areas, no impact would result.
- e. Migratory Birds. There could be an adverse impact on migratory bird nesting in the DMMA's. This impact would be mitigated by the implementation of the Districts migratory bird protection plan during construction. This plan includes the voluntary avoidance of migratory bird nesting season (1 April through 30 August). If avoidance cannot be accomplished then, a monitor is employed to identify and segregate nesting areas from construction activities..

4.6.3 Social.

- a. Aesthetics. There would be no adverse impacts. The disposal sites are located within close proximity to an airport, commercial and industrial facilities, and large marinas.
- b. Recreation. The project should propose no adverse impact to any recreational activities occurring on the islands. The normal use of the islands benefit shorebirds and migratory species.

4.6.4 Economic.

- a. Navigation. Long-term benefits would result to navigation with the use of accessible sites for disposal operations.
- b. Economics. There would be a short-term stimulus to the local economy from the sale of goods and services in support of the project.

4.6.5 Cumulative Effects.

There would be no adverse cumulative effects from the selection of this disposal alternative.

4.6.6 Unavoidable Effects.

Some disruption of navigation patterns may occur to large vessels during maintenance and disposal of dredged material. This impact would be only short-terms and would provide long-term benefits at conclusion. Smaller vessels should not experience any navigation disruptions.

4.6.7 Irreversible and Irretrievable Resource Commitments.

A long-term commitment has been made concerning the designation of the upland disposal area, and the use and maintenance of the navigation channel. Basically, these commitments of the bottom resources are irreversible and irretrievable.

5 LIST OF PREPARERS

<u>NAME</u>	<u>DISCIPLINE</u>	<u>EXPERIENCE</u>	<u>ROLE IN PREPARING EA</u>
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Tommy Birchett	Archeologist	21 years experience NEPA documentation	Cultural Resources Analysis
C.L. Brooks	Biologist	22 years environmental impacts	EA revisions Impact Assessment
Paul C. Stevenson	Landscape Architect	9 years landscape architect, field and design work	Aesthetic and Recreational Resource Analysis
Glen Schuster	Environmental Engineer	18 years professional engineer	Water Quality Impacts

6 CONSULTATION WITH OTHERS - PUBLIC INVOLVEMENT PROCESS.

In order to comply with the National Environmental Policy Act implementing regulation 33 CFR 335 through 338, a public notice (PN-SPH-193) dated 7 November 1994 was issued for the work requesting comments on the proposed work. The following comments were received.

6.1 FEDERAL RESOURCE AGENCIES

6.1.1 U.S Fish and Wildlife Service (USFWS).

The USFWS by letter dated April 5, 2000, provided a biological opinion (BO) in accordance with Section 7 of the Endangered Species Act of 1973 (Act). The concluding opinion was that the erosion control project as proposed, was not likely to jeopardize the continued existence of the loggerhead or green sea turtle, and is not likely to destroy or adversely modify designated critical habitat. Under the "incidental take" section of the Act, the Corps was advised of requirements related to the species and measures to be employed to ensure protection of loggerhead or green sea turtles species that may be encountered. The BO also included six reasonable and prudent measures considered necessary to and appropriate to minimize take of loggerhead and green sea turtles, in addition to, twelve terms and conditions which implement the reasonable and prudent measures, along with two discretionary conservation recommendations.

6.2 STATE RESOURCE AGENCIES

The State Historic Preservation Officer (SHPO) responded to the public notice PN-SP-227 by letter dated 7 March 2000, stating that based on the information provided, the proposed undertaking would have no adverse effect on historic properties. The letter also noted that Egmont contained three National Register properties, Egmont Key (8Hi117), the Egmont Lighthouse (8Hi117A) and the Fort Dade Cemetery (8Hi117B). The SHPO agreed that the shoreline stabilization project would help in protection of the historic properties at Egmont Key.

6.3 NEW PUBLIC NOTICE

A new public notice (PN-SPH-123) dated January 21, 2000 for the use of the western shoreline of Egmont Key as a placement was issued. No responses were received.

On June 23, 2004, a public notice was issued on the proposed placement of Tampa Harbor maintenance dredged material on Egmont Key. To date, no responses have been received.

6.4 PUBLIC OR WORKING MEETINGS

The State of Florida Parks and Recreation Division conducted several meetings on the proposal. The first meeting was on November 10, 1999, and at January 14, 2000 in Ybor City. This was a working group meeting to discuss problems and potential solutions for Egmont Key placement (Meeting notes, Appendix III).

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